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A Black Box for Patient Safety?

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A BLACK BOX FOR PATIENT SAFETY?

Nathan Cortez*

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INTRODUCTION

What really happened during surgery? Does it have to be a mystery? We don't lack the means to videotape surgeries. Tools for audio-visual recording have become both less expensive and more capable. We don't lack interest in recording surgeries. Families affected by surgical mistakes have advocated for state laws that would require surgeries to be recorded upon request.¹ We also don't lack reasons. Both patient safety programs and medical malpractice litigation spend considerable energy reconstructing what happened during surgery. Perhaps more problematic is that even when we can accurately reconstruct what happened, we don't always understand *why* it happened. Per Victor Hugo, maybe we don't lack the strength; we lack the will?² If this is true, why? If pilots and athletes and stage performers pour over video to improve their performance, why don't surgeons? Do the barriers originate in law, or in medicine, or in both?

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1. See, e.g., H. 633, 187th Gen. Court (Mass. 2011); Wis. State Assemb. 863, 2017–2018 Leg. (Wis. 2017).

2. "People do not lack strength; they lack will." Edward H. Eppens, *Side-Lights on Themes and Texts*, 83 HOMILETIC REV. 78, 79 (1922) (quoting Victor Hugo).

Physicians from the University of Toronto have developed what they call the “O.R. Black Box” to record surgeries in great detail and then detect errors using expert reviews and machine-learning algorithms.³ The implications for both medicine and law may be profound. This Article evaluates how existing law might treat data generated by the O.R. Black Box and similar technologies, and it then contemplates how to craft a more optimal “information policy” to accommodate both patient safety and medical malpractice uses of such data. In short, the O.R. Black Box seems like a good idea. Can the law accommodate it? And if not, what can be done?

I. A BLACK BOX IN THE O.R.

More accurate, sophisticated methods of identifying medical errors like the O.R. Black Box are much needed. Each year, preventable errors cause hundreds of thousands of deaths, millions of injuries, and billions in lost income, lost household production, disability costs, and additional health spending.⁴ The medical industry has long looked to aviation for lessons in how to improve safety and minimize errors.⁵ Health providers today better understand the nature of both human- and systems-based errors thanks to aviation. The widespread adoption of aviation-style checklists during surgery is a frequently-celebrated example.⁶

Aviation also teaches that the events that lead to “near-misses” strongly resemble the events that lead to actual harm.⁷ Likewise, blame-free error reporting in aviation has also inspired arguments for a similar reporting system in medicine. The Federal Aviation Administration (FAA) and the National Aeronautics and Space Administra-

3. Mitchell G. Goldenberg et al., *Using Data to Enhance Performance and Improve Quality and Safety in Surgery*, 152 JAMA SURGERY 972 (2017).

4. OFFICE OF THE INSPECTOR GEN., U.S. DEP'T OF HEALTH & HUMAN SERVS., OEI-06-09-00090, ADVERSE EVENTS IN HOSPITALS: NATIONAL INCIDENCE AMONG MEDICARE BENEFICIARIES, at i–ii (2010); INST. OF MED., TO ERR IS HUMAN 26–27 (Linda T. Kohn et al. eds., 1999); Jill Van Den Bos et al., *The \$17.1 Billion Problem: The Annual Cost of Measurable Medical Errors*, 30 HEALTH AFF. 596, 597 (2011); *How Safe Is Your Hospital? Our New Ratings Find That Some Are Riskier than Others*, CONSUMER REP. (Aug. 2012), <http://www.consumerreports.org/cro/magazine/2012/08/how-safe-is-your-hospital/index.htm> (“More than 2.25 million Americans will probably die from medical harm this decade . . . like wiping out the entire populations of North Dakota, Rhode Island, and Vermont.”).

5. See, e.g., Brian A. Liang & Steven D. Small, *Communicating About Care: Addressing Federal-State Issues in Peer Review and Mediation to Promote Patient Safety*, 3 Hous. J. HEALTH L. & POL'Y 219, 220 n.7 (2003).

6. See generally ATUL GAWANDE, *THE CHECKLIST MANIFESTO: HOW TO GET THINGS RIGHT* (2010). See also Alex B. Haynes et al., *A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population*, 360 NEW ENG. J. MED. 491 (2009).

7. HUMAN FACTORS IN AVIATION 97, 98 (Earl L. Wiener & David C. Nagel eds., 1988).

tion (NASA) encourage reporting of errors and near-misses by using anonymous, voluntary, and confidential reporting for pilots, mechanics, air traffic controllers, and other aviation professionals.⁸ The government explains that it “has chosen to waive fines and penalties, subject to certain limitations, for unintentional violations of federal aviation statutes and regulations which are reported to [the Aviation Safety Reporting System].”⁹ Some of these notions have bled into medicine.

So, it makes sense that the logic of using a “black box” to record flight data to better understand aviation errors would also make its way into medicine. In 1965, Air Canada installed the first multi-channel, in-flight “black box” recorders on commercial aircraft.¹⁰ The idea was to capture pilot audio and other flight data to understand the circumstances that preceded plane crashes.¹¹ Inspired by black boxes in aviation, Teodor Grantcharov and others at the University of Toronto Department of Surgery developed the O.R. Black Box to record surgeries and detect errors.¹² The O.R. Black Box gathers audio, visual, and other digital data from multiple video cameras, microphones, and other devices and sensors in the operating room during surgery.¹³ With these data, the system then uses expert reviews, machine-learning algorithms, and error-analysis software (a “perception engine”) to create a timeline of the surgery.¹⁴ This system flags surgical events, errors, and deviations from standard surgical techniques and protocols.¹⁵ Trend analyses can further identify safety threats, error mechanisms, event patterns, and surgical performance, which then can inform targeted education, coaching, and other interventions to miti-

8. See Katharine Van Tassel, *Using Clinical Practice Guidelines and Knowledge Translation Theory to Cure the Negative Impact of the National Hospital Peer Review Hearing System on Healthcare Quality, Cost, and Access*, 40 PEPP. L. REV. 911, 969–70 (2013) [hereinafter Van Tassel, *Using Clinical Practice Guidelines and Knowledge Translation Theory*].

9. *Confidentiality and Incentives to Report*, AVIATION SAFETY REPORTING SYS., <http://asrs.arc.nasa.gov/overview/confidentiality.html> (last visited Nov. 3, 2018).

10. *Facts About Air Canada*, AIR CANADA, <http://www.aircanada.com/ca/en/aco/home/about/media/facts-about-air-canada.html> (last visited Nov. 3, 2018). The first recorder was developed by Australian researcher David Warren in the wake of several unresolved crashes of the first jet-powered airliner, the de Havilland Comet. Of course, the aviation community in Australia initially resisted its use. See Jason Paur, *March 17, 1953: The Black Box is Born*, WIRED (Mar. 17, 2010, 12:00 AM), <https://www.wired.com/2010/03/0317warren-invents-airplane-black-box/>.

11. Paur, *supra* note 10.

12. Chethan Sathya, *Surgical “Black Box” Could Reduce Errors*, CNN (Aug. 22, 2014, 4:25 PM), <http://www.cnn.com/2014/08/22/health/black-box-surgery/index.html>.

13. Teodor Grantcharov, O.R. Black Box: Using Data to Improve Performance and Safety (presentation on file with author).

14. *Id.*

15. *Id.*

gate future errors.¹⁶ For example, the O.R. Black Box might associate certain intraoperative events like thermal injuries or excessive bleeding with certain intraoperative errors like inadequate visualization or excessive force.¹⁷ The program might then further correlate these problems with tool malfunction, distractions in the operating room, or an error in technique.¹⁸ After identifying safety threats and their likely causes, data from the O.R. Black Box can be used for surgical coaching and building resilience in the surgical team.¹⁹

Grantcharov and Alexander Langerman stress the rationale behind this technology:

Capturing OR activity via video is vastly beneficial. Recordings enhance training, provide useful data for patients' medical records, and form the foundation to analyze OR performance and safety. Technology and photography systems allow multiview, high-resolution images of patient anatomy, the surgical team, and all activities, creating an omniscient record of a patient's treatment.

These raw, unbiased accounts—both of room activity and the procedure itself—will ostensibly be closer to “truth” than the post-hoc recollections contained in surgical dictations, which frequently lack important details missed or undocumented by the surgeon. Recordings of the entire OR allow an objective evaluation of unrecognized risks and hazards and provide more effective root cause analysis and peer review after adverse events. . . .

We will be able to systematically assess new techniques and technologies, identify best practices among numerous individual prefer-

16. *Id.* The creators describe the O.R. Black Box as “a multiport synchronized data capture and analytic platform.” Goldenberg et al., *supra* note 3, at 972. In more detail:

The OR Black Box continuously acquires various intraoperative data feeds, such as audiovisual data, physiological parameters from both patients and health care professionals, and multiple other sensors and devices Video is captured using in-room wide-angle cameras, and intracorporeal video is collected from the laparoscope or robotic camera or from light-mounted or wearable cameras in open surgical procedures. All inputs are synchronized, encrypted, and stored on a secure server for further analysis. Expert analysis and software-based algorithms populate a procedural timeline using relevant data drawn from these inputs. Data points include procedural steps, disruptive environmental and organizational factors, OR team technical and nontechnical skills, surgeon physiological stress, and intraoperative errors, events, and rectification processes.

Id.

17. *Id.*

18. *Id.*

19. Grantcharov, *supra* note 13. Coaching surgeons has been shown to be effective at enhancing surgical skill. See generally Esther M. Bonrath et al., *Comprehensive Surgical Coaching Enhances Surgical Skill in the Operating Room: A Randomized Controlled Trial*, 262 *ANNALS SURGERY* 205 (2015).

ences, and provide evidence-based recommendations for process improvements and surgical training.²⁰

Other studies confirm the power of video. For example, a hospital in Long Island, New York saw handwashing compliance rates jump from 6.5% to 81.6% after installing cameras to monitor practices.²¹ And at Indiana University, a blinded review showed that videotaping colonoscopies increased mean inspection time by 49% and improved the quality of the inspection by 31%.²²

The O.R. Black Box is being tested on laparoscopic weight-loss surgery, a high-volume, frequently-performed procedure that lends itself to error analysis.²³ The great promise is that concurrent and direct observation will collect more objective, comprehensive, and granular data about surgical performance than retrospective reviews of patient records and incident reports.²⁴ These retrospective reviews are subject to recall bias and often fail to change behavior.²⁵ Moreover, because all the data from the O.R. Black Box are digitized and available in non-structured formats, they are more amenable to analysis by machine-learning algorithms.²⁶ As such, popular media have latched onto the potential of these technologies to improve patient care and decrease health spending.²⁷

The O.R. Black Box, in short, may dramatically improve both the quantity and quality of information available about surgical errors and performance. The technology may force us to recalibrate our ideas about the first-order question of what information about medical care is available, with obvious second-order questions regarding who can access, use, and disclose it. The Institute of Medicine's seminal report, *To Err Is Human*, observed that a predicate to improving patient safety is collecting more and better information about medical errors.²⁸ The O.R. Black Box may represent a large step toward meeting this charge.

20. Alexander Langerman & Teodor Grantcharov, *Are We Ready for Our Close-Up? Why and How We Must Embrace Video in the OR*, 266 ANNALS SURGERY 934, 934 (Dec. 2017).

21. Donna Armellino et al., *Using High-Technology to Enforce Low-Technology Safety Measures: The Use of Third-Party Remote Video Auditing and Real-Time Feedback in Healthcare*, 54 CLINICAL INFECTIOUS DISEASES 1, 5 (2012).

22. Douglas K. Rex et al., *The Impact of Videorecording on the Quality of Colonoscopy Performance: A Pilot Study*, 105 AM. J. GASTROENTEROLOGY 2312, 2312 (2010).

23. Goldenberg et al., *supra* note 3, at 973.

24. *Id.*

25. *Id.* at 972.

26. *Id.*

27. See, e.g., Sathya, *supra* note 12; Erika Tucker, *Airline-Inspired Black Box to Help Surgeons Improve O.R. Performance*, GLOBAL NEWS (July 8, 2014, 4:53 PM), <https://globalnews.ca/news/1439596/airline-inspired-black-box-to-help-surgeons-improve-o-r-performance/>.

28. INST. OF MED., *supra* note 4, at 4.

Unfortunately, the creators of the O.R. Black Box see uncertainty about legal liability as a potential barrier to adoption in the United States.²⁹ Nonetheless, pilot use in select U.S. hospitals has begun, and the system was being tested in six countries as of April 2018.³⁰ Still, there is significant uncertainty as to how U.S. law would treat data generated by the O.R. Black Box or similar technologies.

II. THE PEER REVIEW PRIVILEGE

An obvious way to encourage hospitals to record surgeries would be to protect recordings from discovery under state and federal laws that grant evidentiary privileges to hospital peer reviews. In its most basic formulation, hospital peer review is the process by which physicians evaluate the professional competence of other physicians with privileges at that facility.³¹ The process itself usually proceeds in two or three phases: (1) an investigation phase that includes a review of documents, records, and perhaps interviews; (2) a hearing phase that allows the physician in question to participate; and sometimes (3) an appellate phase that allows decisions to be appealed to a hospital board of directors.³² Hospitals must operate a peer review system to maintain accreditation by the Joint Commission and to participate in Medicare.³³ Moreover, it is not uncommon for states to require hospital peer review as a condition of licensure.³⁴

Peer review is often justified based on several overlapping notions: only physicians can properly evaluate other physicians; non-public reviews are a necessary precondition to candid communication about medical errors; and review by one's peers will motivate physicians to

29. Goldenberg et al., *supra* note 3, at 973.

30. Discussion with Teodor Grantcharov (Apr. 17, 2018). The six countries include: Austria, Belgium, Canada, Denmark, the Netherlands, and the United States. *Id.*

31. Michael D. Benson et al., *Hospital Quality Improvement: Are Peer Review Immunity, Privilege, and Confidentiality in the Public Interest?*, 11 NW. J.L. & SOC. POL'Y 1, 2–3 (2016); Charles R. Koepke, *Physician Peer Review Immunity: Time to Euthanize a Fatally Flawed Policy*, 22 J.L. & HEALTH 1, 3 (2009) (“Simply defined, physician peer review is the process whereby doctors evaluate the quality of their colleagues’ work product in order to assure that prevailing standards of care are being met.”). Although most commonly performed at hospitals, the peer review privilege often extends to non-hospital facilities that provide medical care, including ambulatory surgical centers, nursing homes, and other licensed facilities. *See, e.g.*, CAL. BUS. & PROF. CODE § 805(a)(1)(B)(i) (West 2017).

32. For more detail on the process, see Van Tassel, *Using Clinical Practice Guidelines and Knowledge Translation Theory*, *supra* note 8, at 927–29; AM. HEALTH LAWYERS ASS’N, PEER REVIEW GUIDEBOOK: CREDENTIALING AND PEER REVIEW PRACTICE GROUP OF THE AMERICAN HEALTH LAWYERS ASSOCIATION (3d ed. 2003).

33. 42 C.F.R. § 482.22 (2018).

34. *See, e.g.*, TEX. HEALTH & SAFETY CODE ANN. § 161.0315 (West 2017).

provide higher quality care.³⁵ As such, both state and federal law, to varying degrees, privilege from discovery materials generated during peer review.

A. State Statutory Privileges

Every state privileges the records and communications generated for peer review actions, and most states also protect from discovery other forms of internal evaluation, such as hospital morbidity and mortality conferences, root cause analyses, and to a lesser extent, error reports—though states vary quite a bit on these later categories.³⁶

First, most states provide some form of statutory immunity for participants in hospital peer review committees.³⁷ The idea behind statutory immunity is to protect physicians that serve on peer review committees from being sued under antitrust or unfair competition laws by the physician whose performance had been reviewed.³⁸

Second, the more robust state laws also privilege these materials from civil discovery.³⁹ Notable states with a peer review privilege include California,⁴⁰ Illinois,⁴¹ New York,⁴² and Texas.⁴³ Indeed, a 2016 review found that, “[e]xcept for New Jersey, every state and the District of Columbia have some form of privilege for the peer review process”⁴⁴ The obvious purpose is to prevent malpractice plaintiffs from using documents and communications generated by hospital peer review committees to prove that a physician was negligent.⁴⁵

Third, as an additional layer of protection, “all but ten states protect the confidentiality of peer review information”—meaning that outside a judicial proceeding, peer review information may not be released to

35. Ilene N. Moore et al., *Rethinking Peer Review: Detecting and Addressing Medical Malpractice Claims Risk*, 59 VAND. L. REV. 1175, 1177 (2006).

36. Joanna C. Schwartz, *A Dose of Reality for Medical Malpractice Reform*, 88 N.Y.U. L. REV. 1224, 1264 (2013).

37. Benson et al., *supra* note 31, at app. The exceptions being California, Nevada, New Hampshire, and Oregon. *Id.*

38. Eleanor D. Kinney, *Hospital Peer Review of Physicians: Does Statutory Immunity Increase Risk of Unwarranted Professional Injury?*, 13 MICH. ST. U. J. MED. & L. 57, 63 (2009).

39. Benson et al., *supra* note 31, at 6, app.

40. CAL. EVID. CODE § 1157 (West 2018).

41. 735 ILL. COMP. STAT. 5/8-2101–2102 (2017).

42. N.Y. PUB. HEALTH LAW § 2805-m(2) (McKinney 2018).

43. TEX. OCC. CODE ANN. §§ 160.006–160.007 (West 2017). In Texas, the peer review privilege is expansive. TEX. HEALTH & SAFETY CODE ANN. § 161.032 (West 2017); Gail N. Friend et al., *The New Rules of Show and Tell: Identifying and Protecting the Peer Review and Medical Committee Privileges*, 49 BAYLOR L. REV. 607 (1997).

44. Benson et al., *supra* note 31, at 6. *See also id.* at app.

45. Benson et al., *supra* note 31, at 6.

third parties.⁴⁶ Thus, in all but a few states, peer review documents enjoy statutory immunity and are both confidential and non-discoverable.

To consider just one prominent example, California's Evidence Code protects from discovery the records and proceedings of hospital peer review committees.⁴⁷ In some cases, courts have interpreted the protection broadly, noting that the law "exact[s] a social cost because it impairs malpractice plaintiffs' access to evidence."⁴⁸ California's Business and Professions Code also requires peer review bodies to report adverse actions such as the termination or restriction of staff privileges to state agencies.⁴⁹ However, these reports to state agencies do not jeopardize their confidentiality vis-à-vis other third parties.⁵⁰

Of course, not all state privileges are coextensive, particularly as to the scope of records protected. Some state privileges are narrow, covering only a peer review committee's formal records and proceedings, rather than, say, the incident reports and other germinal records that may be produced by staff who observe mistakes in patient care.⁵¹ In these narrow states, records cannot be strategically shielded from discovery by being funneled through peer review committees. However, some state privileges can be much broader, protecting incident reports and other germinal communications made to peer review committees.⁵² Of course, information independently available outside the peer review process is not privileged, including records maintained in the regular course of business, such as a patient's medical records.⁵³

Would video recordings of surgeries be privileged from discovery under state law? Would subsequent error analysis of the kind generated by the O.R. Black Box software be privileged? In narrow states, one could imagine an argument by malpractice plaintiffs that the recordings themselves, and perhaps also the software's error analyses, would be a germinal record created prior to and outside of the formal peer review proceedings, thus making it discoverable. But in states with more expansive privileges, one could imagine that such record-

46. Benson et al., *supra* note 31, at 6. *See also id.* at app.

47. CAL. EVID. CODE § 1157 (West 2018).

48. *See, e.g., County of Los Angeles v. Martinez*, 274 Cal. Rptr. 712, 716 (Cal. Ct. App. 1990) (quoting *Matchett v. Superior Court*, 115 Cal. Rptr. 317, 320 (Cal. Ct. App. 1974)).

49. CAL. BUS. & PROF. CODE § 805(b) (West 2017).

50. *Id.* § 805(g).

51. Melissa Chiang, *Promoting Patient Safety: Creating a Workable Reporting System*, 18 YALE J. ON REG. 383, 388 (2001).

52. A good example is Texas. *See* TEX. OCC. CODE ANN. § 160.007(a) (West 2017); TEX. HEALTH & SAFETY CODE ANN. § 161.032(a) (West 2017).

53. *See, e.g., TEX. HEALTH & SAFETY CODE ANN.* § 161.032(c).

ings and software analyses would qualify for the privilege, if broadly construed. Yet, even in states with broader privileges, one could argue that the underlying recordings themselves—as opposed to the software’s error analyses and findings—would be discoverable in the same way that surgical notes would be discoverable, as creations antecedent to the peer review process. It is thus possible that in narrow states, the video recordings and the software analyses would be treated separately.

However, even in narrow states, a hospital might be able to amend its bylaws to form a special committee on surgical quality, for example. The special committee would be established for the purpose of recording surgeries and reducing errors—thus protecting both the underlying video and the subsequent software analyses. In California, a court applied the state’s peer review privilege to a hospital’s infection control committee.⁵⁴ The California court also noted that infection control is mandated by California regulations, by hospital accreditors like the Joint Commission, and by American Hospital Association (AHA) guidelines.⁵⁵ Still, there is the question of scope. Precisely which information and records would be discoverable? As the California court observed:

Information developed or obtained by hospital administrators or others which does not derive from an investigation into the quality of care or the evaluation thereof by a medical staff committee, and which does not disclose the investigative and evaluative activities of such committee, is not rendered immune from discovery . . . merely because it is later placed in the possession of a medical staff committee or made known to committee members; and this may be so even if the information in question may be relevant in a general way to the investigative and evaluative functions of the committee.⁵⁶

The court continued that some information clearly falls within the review committee’s privilege, including “self-generated analysis” of the committee.⁵⁷ Records gathered “as a matter of course” for committee review might qualify for the privilege, at least in California.⁵⁸ Still, the California Supreme Court has held that records need not be “generated by the protected committee” to qualify for the privilege.⁵⁹ Thus,

54. *Santa Rosa Memorial Hosp. v. Leary*, 220 Cal. Rptr. 236, 239–40 (Cal. Ct. App. 1985).

55. *Id.* at 246 (citing CAL. CODE REGS. tit. 22, § 70739 (2018); JOINT COMM’N ACCREDITATION HOSPS., MANUAL FOR HOSPITALS (1985); and AM. HOSP. ASS’N., INFECTION CONTROL IN THE HOSPITAL (4th ed. 1979)).

56. *Id.* at 245.

57. *Id.* at 247.

58. *Id.* at 249.

59. *Alexander v. Superior Court*, 859 P.2d 96, 100 (Cal. 1993) (citing *Hinson v. Clairemont Cmty. Hosp.*, 267 Cal. Rptr. 503 (Cal. Ct. App. 1990)). Additionally, the court observed that the

it seems that the video recordings generated by the O.R. Black Box and similar programs might be discoverable in certain states, depending on how expansively courts construe their statutory privileges.

B. The Federal Privilege

Although most of the relevant law here is state law, two federal laws are also worth considering. First, the Health Care Quality Improvement Act of 1986 (HCQIA) protects both hospitals and members of their peer review committees from liability when conducting peer review activities, referred to in the statute as “professional review actions.”⁶⁰ The Act precludes both state and federal causes of action, such as an antitrust claim under federal law.⁶¹ However, unlike state laws, the HCQIA does not privilege peer review documents from civil discovery.⁶² It insulates participants from liability without creating an evidentiary privilege.

An interesting question is whether a system like the O.R. Black Box would qualify as a “professional review action” under the HCQIA. To qualify, the Act requires that a review action must be taken:

- (1) in the reasonable belief that the action was in the furtherance of quality health care,
- (2) after a reasonable effort to obtain the facts of the matter,
- (3) after adequate notice and hearing procedures are afforded to the physician involved or after such other procedures as are fair to the physician under the circumstances, and
- (4) in the reasonable belief that the action was warranted by the facts known after such reasonable effort to obtain facts and meeting the requirement of paragraph (3).⁶³

The Act seems to contemplate retrospective review, not concurrent or prospective monitoring like the O.R. Black Box provides—though that could be a matter of semantics. However, a surgeon agreeing beforehand to have a procedure recorded and analyzed by the O.R. Black Box may be said to have waived any arguments under paragraph (3) that there was inadequate notice or process.

As an important aside, the HCQIA also established the National Practitioner Databank (NPDB) to serve as a clearinghouse for “pro-

Florida Supreme Court had reached the same interpretation of a similarly-worded statute in *Cruger v. Love*, 599 So.2d 111, 114 (Fla. 1992). *Id.*

60. 42 U.S.C. § 11111(a)(1) (2012).

61. *Id.*

62. See, e.g., *Teasdale v. Marin General Hosp.*, 138 F.R.D. 6691 (N.D. Cal. 1991); *LeMasters v. Christ Hosp.*, 791 F. Supp. 188 (S.D. Ohio 1991).

63. 42 U.S.C. § 11112(a) (2012).

fessional review actions” taken against practitioners.⁶⁴ Of course, the NPDB has received significant attention for its shortcomings. Intended to be a nationwide database of physicians with a record of malpractice or loss of clinical privileges, instead the Databank is easily bypassed and thus woefully incomplete. For example, a 2009 report by Public Citizen found that the Databank is missing thousands of incidents that should be reported each year.⁶⁵ Public Citizen estimated that anywhere from 5,000 to 10,000 adverse actions by hospitals would be reportable to the NPDB each year, but an average of only 650 were reported yearly between 1990 and 2007.⁶⁶ Indeed, by the end of 2007, a staggering 49% of hospitals registered with the NPDB “had never reported a clinical privilege sanction to the NPDB.”⁶⁷ Thus, the NPDB is viewed by many as a failed experiment in disclosure-based regulation.⁶⁸

The second important federal law here is the Patient Safety and Quality Improvement Act of 2005 (PSQIA).⁶⁹ Congress passed the Act largely in response to the Institute of Medicine’s seminal report, *To Err Is Human*, which found that medical errors are responsible for up to 98,000 deaths annually—roughly 270 per day.⁷⁰ The PSQIA privileges from discovery any records generated by health care providers that qualify as “patient safety work product” and are submitted to external “patient safety organizations” (PSOs) such as the Joint Commission.⁷¹ The Act defines “patient safety work product” as “data, reports, records, memoranda, analyses . . . and written or oral statements” generated by a health care provider for reporting to a

64. The HCQIA does not refer to the National Practitioner Databank by name, though it requires reports. 42 U.S.C. § 11131 (2012). The name derives from the regulations implementing the Act. 45 C.F.R. §§ 60.1–60.22 (2018).

65. Alan Levine & Sidney Wolfe, *Hospitals Drop the Ball on Physician Oversight: Failure of Hospitals to Discipline and Report Doctors Endangers Patients*, PUB. CITIZEN 5 (May 27, 2009), <https://www.citizen.org/sites/default/files/18731.pdf>.

66. *Id.*

67. *Id.* at 5–9.

68. Benson et al., *supra* note 31, at 14–15. For critiques of disclosure-based regulation, see generally ARCHON FUNG ET AL., *FULL DISCLOSURE: THE PERILS AND PROMISE OF TRANSPARENCY* (2007); Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Disclosure*, 159 U. PA. L. REV. 647 (2011); Nathan Cortez, *Regulation by Database*, 89 U. COLO. L. REV. 1 (2018).

69. Patient Safety and Quality Improvement Act of 2005, Pub. L. No. 109-41, 119 Stat. 424 (codified as 42 U.S.C. §§ 299b-21–299b-26 (2012)).

70. INST. OF MED., *supra* note 4, at 26, 31. For a critique of this estimate, see, for example, Clement J. McDonald et al., *Deaths Due to Medical Errors Are Exaggerated in Institute of Medicine Report*, 284 JAMA 93 (2000).

71. 42 U.S.C. § 299b-22 (2012). The Patient Safety Rule promulgated by the Agency for Healthcare Research and Quality (AHRQ) spells out these requirements in greater detail. 42 C.F.R. §§ 3.10–3.552 (2018).

PSO.⁷² This does not include patient medical records or other records maintained separately from a patient safety evaluation system.⁷³

To qualify as a PSO, an organization must: (1) be certified by the Agency for Healthcare Research and Quality (AHRQ), which requires the improvement of patient safety to be the entity's *raison d'être* and the focus of its primary activities; (2) employ qualified staff (including medical professionals); and (3) not be a health insurer or part of one.⁷⁴ The role of a PSO is to gather provider records ("patient safety work product"), evaluate them, and make recommendations in the form of revised protocols, best practices, and other corrections that can minimize risks to patients.⁷⁵ The statute requires PSOs, "to the extent practicable," to collect anonymized records in a "standardized manner that permits valid comparisons of similar cases among similar providers" and then to report that standardized data to AHRQ.⁷⁶ With nonidentifiable versions of these data⁷⁷ and the idea of creating a non-punitive, evidence-based system for providers and PSOs to improve quality care,⁷⁸ AHRQ maintains databases showing patient safety incidents, near misses, or unsafe conditions.⁷⁹

To fit materials generated by the O.R. Black Box into this privilege, a hospital obviously would have to send the materials to an AHRQ-certified PSO. Thus, as with state law, it is easy to see ways that the O.R. Black Box and its findings would qualify for the federal privilege.

C. Critiques

The peer review privilege is not immune from criticism. In 2009, Public Citizen published a scathing report on peer review, finding ineffective investigations, widespread under-reporting to the NPDB, and routine failure to take disciplinary actions.⁸⁰ Immunity is accused of being both too lenient and too strict in some cases, depending on whether the committee makes a Type 1 error (i.e., a false positive finding of substandard care) or a Type 2 error (i.e., a false negative finding

72. 42 U.S.C. § 299b-21(7) (2012).

73. *Id.*

74. 42 U.S.C. §§ 299b-24(b)(1), 299b-24(d) (2012).

75. 42 U.S.C. § 299b-21(5).

76. 42 U.S.C. § 299b-24(b)(1)(F).

77. 42 U.S.C. § 299b-23 (2012).

78. *Id.* § 299b-23(a).

79. *Common Formats*, AGENCY FOR HEALTHCARE RES. & QUALITY, <https://www.pso.ahrq.gov/common> (last visited Mar. 21, 2018).

80. Levine & Wolfe, *supra* note 65.

of competent care).⁸¹ The quality of the evidence and scientific validity of data used by peer review committees are frequently criticized.⁸² Critics also point to instances in which hospitals have used sham or bad faith peer review—or merely the threat of it—as a weapon to retaliate against doctors that raised concerns about the quality of care at the facility,⁸³ or as a way to undermine fellow competitors.⁸⁴ Critics also argue that errors and abuses in the peer review process actually undermine quality control and thus, paradoxically, undermine a key rationale for peer review.⁸⁵ For example, a retrospective analysis of physician reviews using a Medicare database showed significant disagreement among reviewers in what constituted “quality” care, finding that reviewers “judged care much more harshly among cases with serious adverse outcomes although the care was *identical* in each matched case.”⁸⁶ Given the inaccuracies and abuses of peer review, some physicians argue that immunity should be eliminated.⁸⁷

None of this necessarily undermines systems like the O.R. Black Box, however. Video recordings and software-based error analyses should provide more objective data to peer review committees, which might blunt many of the above criticisms.

III. IS SURGICAL VIDEO DISCOVERABLE AND ADMISSIBLE?

If not privileged by statute, would surgical video be discoverable or otherwise admissible under common law? Caselaw evaluating the issue in any depth is surprisingly sparse. Cases show that some surgeries are videotaped, and these tapes sometimes are given to patients or their families in the wake of errors.⁸⁸ Video can be useful in explain-

81. Benson et al., *supra* note 31, at 2.

82. See, e.g., Katherine Van Tassel, *Hospital Peer Review Standards and Due Process: Moving from Tort Doctrine to Contract Principles Based on Clinical Practice Guidelines*, 36 SETON HALL L. REV. 1179 (2006); Van Tassel, *Using Clinical Practice Guidelines and Knowledge Translation Theory*, *supra* note 8.

83. Benson et al., *supra* note 31, at 9 (citing Steve Twedt, *The Cost of Courage: How the Tables Turn on Doctors*, PITTSBURGH POST-GAZETTE (Oct. 26, 2003, 3:00 AM), <http://www.post-gazette.com/news/nation/2003/10/26/The-Cost-of-Courage-How-the-tables-turn-on-doctors/stories/200310260052>).

84. See generally Koepke, *supra* note 31.

85. Benson et al., *supra* note 31, at 8.

86. Saul N. Weingart et al., *Physician-Reviewers' Perceptions and Judgments About Quality of Care*, 5 INT'L J. QUALITY HEALTH CARE 357, 357 (2001) (emphasis added).

87. Benson et al., *supra* note 31, at 1; Koepke, *supra* note 31. Of course, other physicians defend it, even while acknowledging its shortcomings. See, e.g., Moore et al., *supra* note 35.

88. See, e.g., Giles v. Brookwood Health Servs., Inc., 5 So.3d 533, 540–41 (Ala. 2008) (oophorectomy videotaped and recording given to patient in wake of wrong-site surgery, removing right ovary instead of left ovary); Morgan v. Abay, 850 P.2d 840, 842 (Kan. 1993) (noting that portions of a brain surgery were videotaped, but not whether the recording was given to plaintiffs); Ben-

ing complex surgical procedures to juries,⁸⁹ even when the video shows surgery on a different patient.⁹⁰ In at least some cases, the surgery was recorded for teaching purposes rather than for purposes of quality control.⁹¹ In one of these cases, the court held that a video recording was not discoverable because it was not part of the patient's medical record.⁹² The court reasoned that the video was not required to be made by the hospital or the surgeon, was created purely to educate other surgeons, and "was not made in any respect for the care or treatment of the patient."⁹³ However, the court also noted that the tape could be discoverable if the plaintiff later stated a cause of action, instead of seeking the tape for the purpose of establishing one in the first instance.⁹⁴

Of course, when video is introduced by plaintiffs to show negligence, defendants often argue that it is inadmissible.⁹⁵ For example, in a product liability case involving breast implants, the trial court excluded video of the surgery to remove the plaintiff's implants after counsel for the manufacturer argued that it was offensive and "difficult to watch."⁹⁶ Instead, the court admitted still photos of the surgery and testimony regarding whether the surgeon had cut the implant dur-

fer v. Sachs, 797 N.Y.S.2d 592 (N.Y. App. Div. 2005) (defendant orthopedic surgeon had recorded spine surgery and had provided copy of tape to plaintiff before trial). Of course, patients are not always successful at accessing videotapes during pretrial discovery. See, e.g., Hill v. Springer, 506 N.Y.S.2d 255 (N.Y. Sup. Ct. 1986) (holding that plaintiff was not entitled to videotape of surgery to determine whether he had a cause of action, as opposed to after a malpractice action has commenced).

89. See, e.g., Benfer, 797 N.Y.S.2d at 592.

90. See, e.g., Glusaskas v. Hutchinson, 544 N.Y.S.2d 323, 324 (N.Y. App. Div. 1989). In *Glusaskas*, the trial court admitted into evidence video of a defendant surgeon performing a similar heart valve replacement surgery on another patient six years after the surgery at question because it "was sufficiently relevant to show the jury how the procedure is done and . . . was not prejudicial." *Id.* However, the video "was prepared exclusively for the trial of the instant action some two or three weeks prior thereto and more time was spent on the videotaped surgery than is the normal practice." *Id.* Moreover, the patient in the video was male rather than female, was a different age, and his physical condition and valve were markedly different from the plaintiff. *Id.* The appellate court agreed with plaintiffs that the videotape was "highly improper, inflammatory, and prejudicial." *Id.*

91. *Traver v. Packaging Indus. Grp., Inc.*, 577 A.2d 876, 876-77 (N.J. Super. Ct. Law Div. 1990) (explaining that a surgery was recorded because, "[c]oincidentally, the Bellevue Hospital microsurgery team was cooperating with a medical publishing company which was preparing a videotape for teaching purposes.").

92. *Id.* at 876-77.

93. *Hill*, 506 N.Y.S.2d at 255.

94. *Id.* at 257.

95. See, e.g., *In re: Diet D (Phentermine, Fenfluramine, Dexfenfluramine) Products Liability Litigation*, No. MDL 1203, 2001 WL 454586 at *24 (E.D. Pa. Feb. 1, 2001) (denying defendant's motion to exclude a videotape of surgery performed by an expert witness on a patient who later became a plaintiff).

96. *Bean v. Baxter Healthcare Corp.* 965 S.W.2d 656, 658 (Tex. Ct. App. 1998).

ing the procedure, causing it to leak silicone.⁹⁷ Although the appellate court held that the trial court did indeed err in excluding the videotape, it found the error to be harmless and thus, not an abuse of discretion.⁹⁸ The appellate court held that the tape was cumulative of other evidence⁹⁹ and found that the whole case did not turn on the excluded evidence.¹⁰⁰

But videos are not always excluded from evidence. For example, video of surgery to repair a gruesome hand injury was admitted in a product liability suit (rather than a malpractice suit) despite the court acknowledging that “the videotape is a graphic display in color of a very unpleasant event.”¹⁰¹ The appellate court held that the tape was not inherently inflammatory and that its probative value in demonstrating the severity of the injury substantially outweighed the risk of undue prejudice, quoting a Chinese proverb that “[o]ne picture is worth more than ten thousand words.”¹⁰²

In some cases, *defendants* introduce video as evidence to show that physicians met the standard of care.¹⁰³ For example, in one case involving a brain surgery that resulted in a stroke and another brain injury, both plaintiffs and defendants offered as evidence videotape of the surgery, without objection.¹⁰⁴ During the trial, plaintiffs played video clips during their experts’ testimony to show that cerebral artery clamps had remained in place for a certain amount of time.¹⁰⁵ Although defendants also played select clips during their expert’s testimony, defendants played the entire forty-minute video during closing arguments, drawing objections from the plaintiffs that doing so placed matters not in evidence before the jury and was intended to inflame and mislead the jury.¹⁰⁶ The trial court overruled the plaintiffs’ objection but warned defendants that they risked distracting the jury.¹⁰⁷ After trial, the court denied plaintiffs’ motion for a new trial, which was

97. *Id.* at 658–60.

98. *Id.*

99. *Id.* at 659–60. The court’s finding that the evidence was cumulative was largely due to plaintiff’s technical failure to reoffer the tape as evidence on a different point. *Id.*

100. *Id.* at 660.

101. *Traver v. Packaging Indus. Grp.*, 577 A.2d 876, 877 (N.J. Super. Ct. Law Div. 1990).

102. *Id.* at 877–78.

103. *Powderly v. S. Cty. Anesthesia Assoc.*, 245 S.W.3d 267, 271–72 (Mo. Ct. App. 2008) (defendants played entire videotape of 40-minute brain surgery during closing argument; but both parties had offered the tape into evidence).

104. *Id.*

105. *Id.* at 271.

106. *Id.* at 271–72.

107. *Id.* at 272.

upheld on appeal.¹⁰⁸ On appeal, the court found that allowing defendants to play the entire video during closing arguments was not an abuse of the trial court's discretion because both parties had, after all, introduced the video in its entirety, without stipulation.¹⁰⁹

Of course, video evidence does not always convey objective truth. Sometimes juries see video of the wrong patient or the wrong procedure by mistake.¹¹⁰ And in at least one instance, plaintiffs found that the recordings had been edited or key sequences deleted, raising the possibility of spoliation.¹¹¹

Thus, whether video from the O.R. Black Box or similar systems is discoverable and admissible is highly uncertain, and inevitably will depend on facts and judicial precedents somewhat unique to each case. Moreover, most states have a rule, similar to Federal Rule of Evidence 403, that gives trial court judges the discretion to balance the probative value of evidence against its likely prejudicial effect on the jury,¹¹² making the outcome in each case even more difficult to predict.

IV. A NEW INFORMATION POLICY?

The O.R. Black Box and similar technologies obviously seem worth pursuing. But we may need a new information policy to accommodate them. Surgical videos and sophisticated software error analyses should increase both the quantity and, hopefully, the *quality* of information about surgical performance. But the law should accommodate both the obvious patient interest in accessing recordings of their own surgeries, as well as the obvious interest of hospitals and surgeons to use such recordings for quality improvement without generating undue liability. And therein lies the traditional tension between an information policy tailored to medical malpractice and an information policy tailored to patient safety. As Bill Sage and colleagues observed in 2006:

108. *Id.*

109. *Powderly*, 245 S.W.3d at 272–73.

110. *Benfer v. Sachs*, 797 N.Y.S.2d 592, 593 (N.Y. App. Div. 2005) (plaintiff offered as evidence video of a spine surgery provided by the defendant surgeon but noted that the identifying numbers on the implanted devices in the video differed from the identifying numbers of the devices implanted in the plaintiff).

111. *Giles v. Brookwood Health Servs., Inc.*, 5 So.3d 533, 541 (Ala. 2008) (“[I]n viewing the tape of two to three minutes of video and after that there appears to be twenty to thirty minutes edited or erased and then a thirty (30) to forty-five (45) second closing. The tape appears to have been changed.”). Although the plaintiff argued that defendants engaged in spoliation of evidence, her claims were not timely and thus were dismissed on summary judgment. *Id.* at 554–55.

112. *See, e.g., Bean v. Baxter Healthcare Corp.*, 965 S.W.2d 656, 659 (Tex. Ct. App. 1998) (applying Texas Rule of Evidence 403, which parallels Federal Rule of Evidence 403).

[T]he law's traditional focus on individual physician responsibility is at odds with emerging theories of systems-based quality improvement predicated on voluntary, confidential self-reporting. On this account, both malpractice liability and public disclosure create a "culture of blame" that arguably retards organizational improvement by inducing physicians to withhold and conceal information about medical errors. Thus it seems that two important uses for information about medical error—accountability and improvement—pull in opposite directions.¹¹³

More recently, however, scholars have begun to recognize the crucial role that malpractice litigation plays in producing information about medical errors that would otherwise not come to light.¹¹⁴ We have also come to recognize that perhaps the pendulum has swung too far in blaming systems rather than individual performance for medical errors.¹¹⁵ Thus, the time is ripe to rethink traditional information policy and move towards a new *détente* between malpractice and patient safety.

But what should an "information policy" for surgical recordings and software analyses look like? Debates about an optimal information policy for malpractice and patient safety often boil down to who has *access* to information about medical errors, with obvious secondary implications regarding the "accuracy, fairness, and effectiveness" of the data.¹¹⁶ In other words, who can access what information, and how is the information processed and presented? The answers to these questions can be sharply contested, given the different audiences for this data—patients, physicians, hospitals, health insurers, plaintiffs' lawyers, malpractice insurers, and other ancillary parties like policy-makers, regulators, investors, academic researchers, and professional and trade associations.¹¹⁷

Can all these interests be accommodated? Perhaps not, given the different goals of information policy in this area—both relational (i.e., as in private law disputes between patients and their providers) and regulatory (i.e., involving broader public law questions over how to improve health system performance).¹¹⁸ Relational and regulatory goals can pull in opposite directions. As a result, scholars can argue at

113. William M. Sage et al., *Bridging the Relational-Regulatory Gap: A Pragmatic Information Policy for Patient Safety and Medical Malpractice*, 59 VAND. L. REV. 1263, 1271 (2006).

114. See, e.g., David M. Studdert & Michelle M. Mello, *In from the Cold? Law's Evolving Role in Patient Safety*, 68 DEPAUL L. REV. 421 (2019).

115. *Id.*; David A. Hyman, *Bad Doctors: Naming and Blaming in a World with Much Less Claiming*, 68 DEPAUL L. REV. 263 (2019).

116. Sage et al., *supra* note 113, at 1265.

117. *Id.* at 1280–83.

118. *Id.*

once both that mandatory malpractice reporting to the NPDB should be repealed, but that confidential settlements in malpractice cases should also be prohibited—two notions that would seem to be incompatible.¹¹⁹ In essence, the trick is deciding what information should be produced, how it should be presented, and who can access it.

The answers to these questions probably reside as much in medicine as in law. Again, I discuss the legal barriers to effective use of surgical video in Parts II and III, above. But the barriers in medicine are just as significant. The prospect of recording clinical encounters can unnerve physicians.¹²⁰ Indeed, in a handful of states where legislators have introduced bills that would allow or even require surgeries to be videotaped, opposition has come primarily from providers.¹²¹ Moreover, professional medical societies do not contemplate video recordings much in their official policies, and when they do, their focus is not patient safety or liability. For example, the American Medical Association (AMA) discusses videotaping patient care in a *Code of Medical Ethics* opinion, but only in terms of privacy and confidentiality.¹²² The preamble states: “Filming cannot benefit a patient medically and may cause harm.”¹²³

Yet, the notion that surgeries should be videotaped to improve quality care is not new. A 1978 law review article observed that it had become customary, by that time, to record surgeries for teaching and quality control purposes:

Videotape in the surgical suite would hardly be an innovation. Videotape cameras and recorders are currently in use in most teaching hospitals, as well as several local hospitals, to measure the quality of medical care rendered by the hospital and its staff, and for use as teaching material for professional personnel.¹²⁴

119. *Id.* at 1264.

120. Glyn Elwyn et al., *Can Patients Make Recordings of Medical Encounters? What Does the Law Say?*, 318 JAMA 513, 513 (2017).

121. Michael C. Ksiazek, *Are Recorded Surgeries the Future of Medical Malpractice Investigation and Medical Error Prevention?*, NAT'L L. REV. (July 29, 2015), <https://www.natlawreview.com/article/are-recorded-surgeries-future-medical-malpractice-investigation-and-medical-error-pr>.

122. *Audio or Video Recording of Patients for Public Education*, AMA, <https://www.ama-assn.org/delivering-care/audio-or-visual-recording-patients-public-education> (last visited Oct. 15, 2018).

123. *Id.*

124. J. Douglas Peters & Bernard J. Wilkes, III, *Videotaping of Surgery for Use as Demonstrative Evidence in Medical Malpractice Litigation*, 16 DUQUESNE L. REV. 358, 361 (1977–78). Peters and Wilkes note that the first judicial approval of videotape evidence was in 1969. *Id.* at 364 (citing *Paramore v. State*, 229 So.2d 855 (Fla. 1969)). That same year, an article in *Surgery* advocated for videotaping surgery. Leonard F. Peltier et al., *Television Videotape Recording: An Adjunct in Teaching Emergency Medical Care*, 66 SURGERY 233 (1969).

But video recordings, particularly outside of teaching hospitals, are not as routine as one might think in modern medicine. As a result, many are pushing to regularize video recordings. A 2013 Journal of the American Medical Association (JAMA) article argued that videotaping procedures can improve quality of care in a number of ways, including providing unbiased evidence for both morbidity and mortality (M and M) conferences and peer review actions.¹²⁵ The JAMA article argued that making “procedure videos” part of patients’ medical records should become as normal as making computed tomography (CT) or magnetic resonance imaging (MRI) images part of their records.¹²⁶ Furthering the analogy, the article notes that “past predictions of a malpractice lawsuit avalanche when CT and [MRI] scan images were about to become available to patients proved not to be true.”¹²⁷ Perhaps the experience with videos would be the same?

Nevertheless, medical culture has not fully embraced videotaped patient encounters, despite the growing ubiquity of mobile recording devices. Patients increasingly ask doctors if they can record their office visits—primarily as a more efficient, accurate way to take notes¹²⁸—but such requests can still unnerve doctors.¹²⁹ As Glyn Elwyn and colleagues have found, “many clinicians and clinics have concerns about the ownership of recordings and the potential for these to be used as a basis for legal claims or complaints.”¹³⁰ Fear of liability persists.

Given ongoing reluctance in the medical community, some states have introduced legislation that would allow patients to videotape their surgeries or even *require* such recordings.¹³¹ For example, a Wisconsin bill would require hospitals, surgery centers, and the like to offer to videotape the procedure for patients undergoing any surgery that requires general anesthesia.¹³² The recording would be made part

125. Martin A. Makary, *The Power of Video Recording: Taking Quality to the Next Level*, 309 JAMA 1591 (2013).

126. *Id.* at 1592.

127. *Id.*

128. Elwyn et al., *supra* note 120, at 513–14; Glyn Elwyn, “Patientgate”—*Digital Recordings Change Everything*, 348 BRIT. MED. J. g2078 (2014) [hereinafter Elwyn, “Patientgate”].

129. See, e.g., Elwyn et al., *supra* note 120, at 513; Michelle Rodriguez et al., *Ethical Implications of Patients and Families Secretly Recording Conversations with Physicians*, 313 JAMA 1615 (2015); Tim Lahey & Glyn Elwyn, *Go Ahead and Hit ‘Record’ in the Doctor’s Office*, STAT (July 10, 2017), <https://www.statnews.com/2017/07/10/record-doctors-office-patient-visit/>.

130. Elwyn et al., *supra* note 120, at 513; Elwyn, “Patientgate”, *supra* note 128.

131. Ksiazek, *supra* note 121.

132. Julie’s Law, Wis. State Assemb. 863, 2017–2018 Leg. (Wis. 2017). The bill was named for a thirty-eight-year-old patient given a fatal dose of propofol during surgery. Ksiazek, *supra* note 121. Both the Wisconsin Hospital Association and Wisconsin Medical Society oppose the bill. *Id.*

of the patient's medical record, and although disclosure to third parties would be limited, there would be an exception for disclosure to an attorney "for the purpose of obtaining legal advice."¹³³ Likewise, in 2011 the Massachusetts General Assembly considered a bill that would provide for recorded surgeries.¹³⁴

Two proposed bills do not a trend make. But perhaps given modern capabilities, surgeries *should* be recorded and *should* be made part of patients' medical records. As Stephen Landsman observes, "the medical world's silence about its mistakes may be the product of forces and views within medicine, rather than a response to intrusions of the legal system."¹³⁵ But if resistance resides primarily in medicine rather than law, perhaps clarifying the legal implications would ease medicine's concerns.

Again, despite conventional wisdom, a culture of patient safety that depends on being open and honest is not necessarily antithetical to a culture of malpractice litigation in which provider instincts are to "deny and defend."¹³⁶ Studies show that the threat of malpractice liability does not necessarily deter error reporting or quality improvement efforts.¹³⁷ In fact, malpractice litigation continues to be an important source of data about failures in medical care¹³⁸ and can incentivize higher quality care.¹³⁹ Joanna Schwartz has examined the real-world dynamics here, conducting a nationwide survey of health care professionals and more in-depth discussions with thirty-five people responsible for risk management and patient safety in hospitals.¹⁴⁰ Her research made two key findings that rebut the conventional wisdom that malpractice liability is incompatible with patient safety.¹⁴¹ First, the surveys and interviews reveal that "malpractice liability does

133. *Id.*

134. H.633, 187th Gen. Court (Mass. 2011).

135. Stephan Landsman, *Reflections on Juryphobia and Medical Malpractice Reform*, 57 DEPAUL L. REV. 221, 232 (2008).

136. Schwartz, *supra* note 36, at 1227.

137. David A. Hyman & Charles M. Silver, *The Poor State of Health Care Quality in the U.S.: Is Malpractice Liability Part of the Problem or Part of the Solution?*, 90 CORNELL L. REV. 893 (2005); TOM BAKER, THE MEDICAL MALPRACTICE MYTH 97 (2005).

138. Tom Baker & Timothy D. Lytton, *Allowing Patients to Waive the Right to Sue for Medical Malpractice: A Response to Thaler and Sunstein*, 104 NW. U. L. REV. 233, 242 (2010); Barry R. Furrow, *The Patient Injury Epidemic: Medical Malpractice Litigation as a Curative Tool*, 4 DREXEL L. REV. 41, 67 (2011); Margo Schlanger, *Operationalizing Deterrence: Claims Management (in Hospitals, a Large Retailer, and Jails and Prisons)*, 2 J. TORT L., 2008, at 31–32.

139. See, e.g., BAKER, *supra* note 137, at 107; David A. Hyman & Charles Silver, *Medical Malpractice Litigation and Tort Reform: It's the Incentives, Stupid*, 59 VAND. L. REV. 1085 (2006).

140. Schwartz, *supra* note 36, at 1246–51.

141. *Id.* at 1230.

not necessarily inhibit the kind of openness and transparency needed to identify and address the root causes of medical errors.”¹⁴² Second, they revealed that malpractice claims produce important information about medical errors not necessarily captured by patient safety efforts.¹⁴³ Overall, Schwartz concludes that “malpractice litigation is not incompatible with a culture of patient safety and, moreover, can play a productive role in efforts to reduce medical error.”¹⁴⁴

Given these findings, a modernized information policy should encourage or even require more transparency and self-disclosure. As Katherine Van Tassel has argued, in the absence of reckless or intentional conduct, physicians should be encouraged to self-report errors:

Just as in the case of the airline pilot who has committed an error who is not punished if that pilot has self-reported, if the physician . . . [has] reported to the anonymous third party reporting system, any sanction should be limited to error avoidance training, and this sanction should not be reported to the NPDB.¹⁴⁵

Different benefits flow from openness and voluntary reporting. First, both the number of lawsuits and overall legal costs actually can fall when hospitals voluntarily disclose errors to patients. A study of the University of Michigan Health System’s effort to voluntarily disclose errors and offer compensation to patients showed a subsequent decrease in claims, lawsuits, and total liability costs to the hospital system.¹⁴⁶ Of course, Michigan’s experience might not translate perfectly to other hospitals that do not have a closed staff model whose practitioners are covered by a captive insurance company that “often assumes legal responsibility.”¹⁴⁷ Still, over the last decade or so, “physicians, hospitals, regulators, and accreditation agencies coalesced around the idea that disclosure was a professional imperative.”¹⁴⁸ Not surprisingly, many liability insurers have embraced affirmative disclosure programs, and those that still retreat to the “deny and defend” posture are regarded in the liability insurance industry as “dinosaurs.”¹⁴⁹ Voluntary disclosure of video captured by systems like the

142. *Id.*

143. *Id.* at 1230–31.

144. *Id.* at 1231.

145. Van Tassel, *Using Clinical Practice Guidelines and Knowledge Translation Theory*, *supra* note 8, at 972. Van Tassel, of course, nods to Bob Wachter’s work here. *See, e.g.*, ROBERT W. WACHTER, *UNDERSTANDING PATIENT SAFETY* 349–53 (2d ed. 2012).

146. Allen Kachalia et al., *Liability Claims and Costs Before and After Implementation of a Medical Error Disclosure Program*, 153 *ANNALS INTERNAL MED.* 213, 217 (2010).

147. *Id.* at 213.

148. Studdert & Mello, *supra* note 114, at ____ (citing Thomas H. Gallagher et al., *Disclosing Harmful Medical Errors to Patients*, 356 *NEW ENG. J. MED.* 2713 (2007)).

149. *Id.* at ____.

O.R. Black Box—but perhaps not disclosure of the software analyses—would seem to be consistent with the movement here.

Second, systems like the O.R. Black Box could even inspire more openness and transparency in the hospital peer review process as well. Some argue that the peer review system would suffer fewer Type 1 and Type 2 errors¹⁵⁰ if it were more transparent.¹⁵¹ With more objective, verifiable data available, there might be less concern that subjectivity will taint the findings. Perhaps a compromise would be to make error data publicly available at the facility level but not at the individual level, given obvious sensitivities regarding physician reputation.¹⁵² Or, perhaps disclosure of data generated by the O.R. Black Box could be given to independent, external, third-party reviewers, which some believe should replace internal reviews anyway.¹⁵³ A final thought is that if the information generated by systems like the O.R. Black Box is a public good, then perhaps the government should even subsidize its production and publication.¹⁵⁴

In summary, prevailing ideas about an optimal “information policy” that can accommodate both malpractice and patient safety goals will need to evolve to account for new technologies like the O.R. Black Box. These technologies may dramatically increase both the quantity and quality of data about surgical performance. This Article is but a modest step in that direction.

CONCLUSION

Technologies like the O.R. Black Box promise to dramatically increase the quantity and quality of information we have about surgical performance. As such, they may require that we recalibrate information policies oriented towards older, less complete types of information. Contemporary thought recognizes that the goals of an information policy tailored to medical malpractice are not necessarily incompatible with the goals of an information policy tailored to patient safety.

Perhaps the compromise here is to include the video recordings of surgery as part of patient records, while protecting the data analyses generated for quality improvement purposes under peer review privi-

150. For a description of Type 1 and Type 2 errors, see *supra* text accompanying note 81.

151. See, e.g., Benson et al., *supra* note 31, at 15–19; Koepke, *supra* note 31, at 1; Susan O. Scheutzow, *State Medical Peer Review: High Cost But No Benefit – Is It Time for a Change?*, 25 AM. J.L. & MED. 7 (1999).

152. Sage et al., *supra* note 113, at 1307.

153. See, e.g., Benson et al., *supra* note 31, at 17–18.

154. Sage et al., *supra* note 113, at 1308.

leges. Thus, objective data is made available to patients, while the subjective evaluation is not made available and is reserved for peer review. Giving patients access to raw video of their own surgeries and making it a routine part of their medical records would also help demystify medicine and show a basic respect for patient autonomy.¹⁵⁵ One caution is that patient access to video without the accompanying trend analyses and other normative evaluations could raise tricky questions about what range of surgical techniques is “normal,” what reasonable variance should be expected, and what variance from standard techniques should constitute malpractice.¹⁵⁶ Moreover, it is hard to know beforehand how often minor, relatively inconsequential errors do and *should* occur.¹⁵⁷ The non-initiated public probably has “unrealistic expectations for perfection” in surgeons.¹⁵⁸

Even though disclosure of video recordings is burdened with some unanswered questions, the merits clearly seem to outweigh the costs. In the 1960s, when flight data recording was first proposed, pilots resisted.¹⁵⁹ Their concerns over “the threat to their privacy and the risk of retribution for mistakes led to legitimate demands for carefully delineated uses of, and protections for, cockpit voice recorder data before cockpit voice recorders were introduced in airplanes.”¹⁶⁰ This Article proposes careful delineations and protections for data generated by technologies like the O.R. Black Box.

155. Langerman & Grantcharov, *supra* note 20, at 934.

156. *Id.* at 935.

157. *Id.*

158. Goldenberg et al., *supra* note 3, at 973.

159. Langerman & Grantcharov, *supra* note 20, at 935.

160. *Id.* at 935.

